

JULY 2016

SPACE LAUNCH SYSTEM HIGHLIGHTS

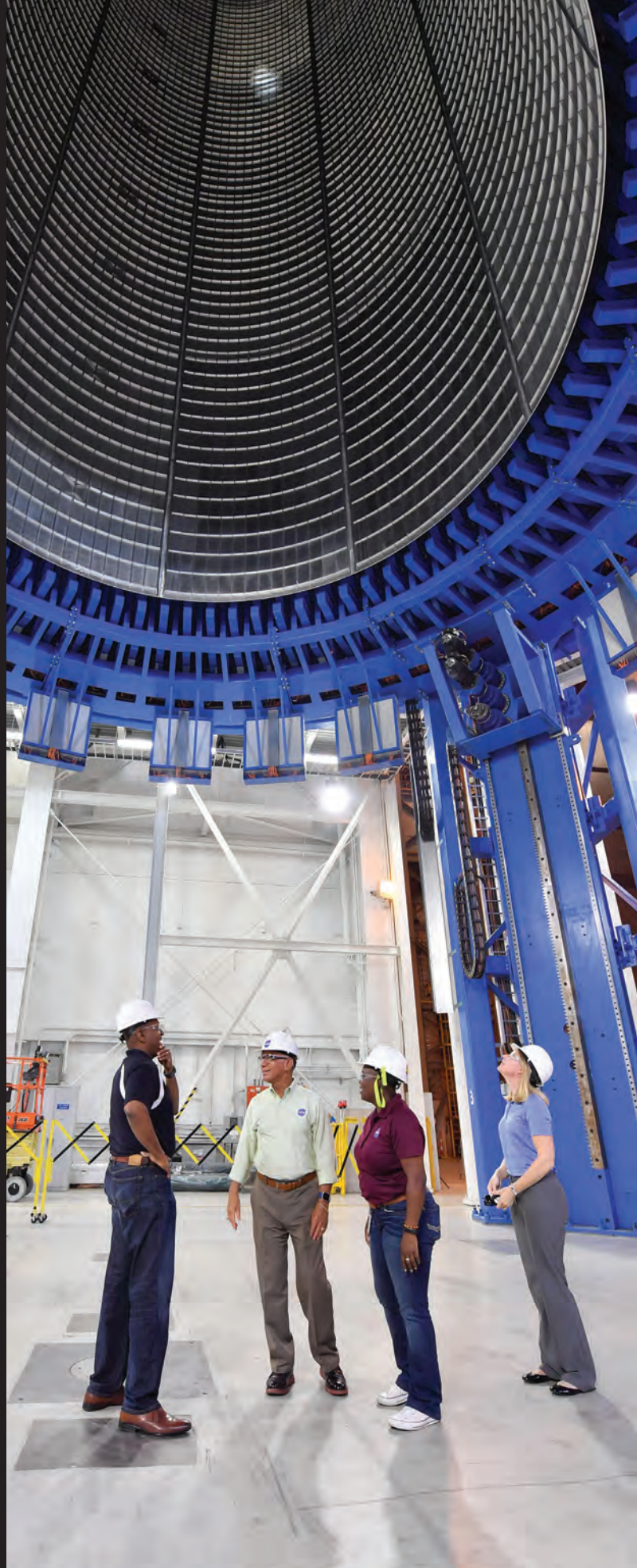
MASSIVE SLS TANK HARDWARE COMPLETED AT MICHOU

NASA COMPLETES WELDING ON SLS FUEL TANK TEST ARTICLE



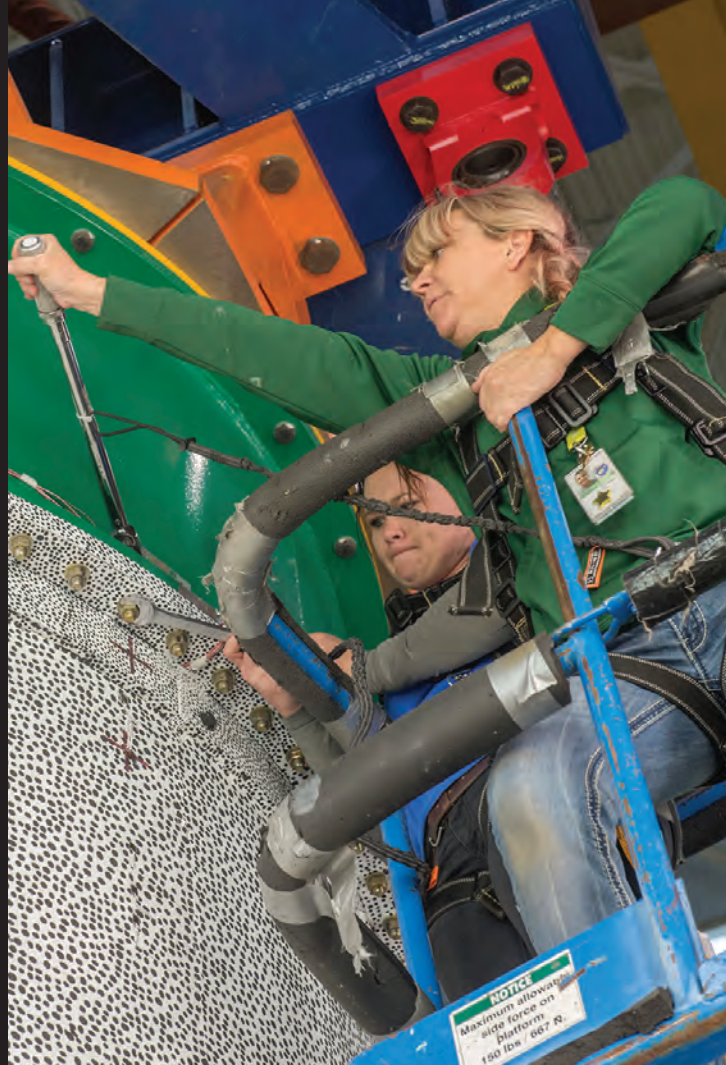
ABOVE: A qualification test article for the SLS liquid hydrogen tank is lifted off the Vertical Assembly Center after final welding at Michoud Assembly Facility in New Orleans. This giant tank isn't destined for space, but it will play a critical role in ensuring the safety of future explorers. The liquid hydrogen qualification article closely replicates flight hardware and was built using identical processing procedures. SLS will have the largest cryogenic fuel tanks ever used on a rocket. The liquid hydrogen tank – along with a liquid oxygen tank – are part of the SLS core stage. The core stage is made up of the engine section, liquid hydrogen tank, intertank, liquid oxygen tank and forward skirt. As four qualification articles of the core stage hardware are manufactured, they will be shipped on the Pegasus barge from Michoud to NASA's Marshall Space Flight Center in Huntsville, Alabama, for structural loads testing.

RIGHT SIDE: Dr. Renee Horton, third from left, lead metallic and weld engineer for the SLS core stage, shows NASA Administrator Charles Bolden, second from left, the liquid hydrogen tank qualification test article in the world's largest welding tool, the Vertical Assembly Center, at Michoud. Now that welding is finished, the liquid hydrogen tank hardware, standing at more than 130 feet tall, will be outfitted with sensors to record important data. It will be tested in a new, twin-tower test stand currently under construction for the tank at the Marshall Center. Structural loads testing ensures that these huge structures can withstand the incredible stresses of launch.

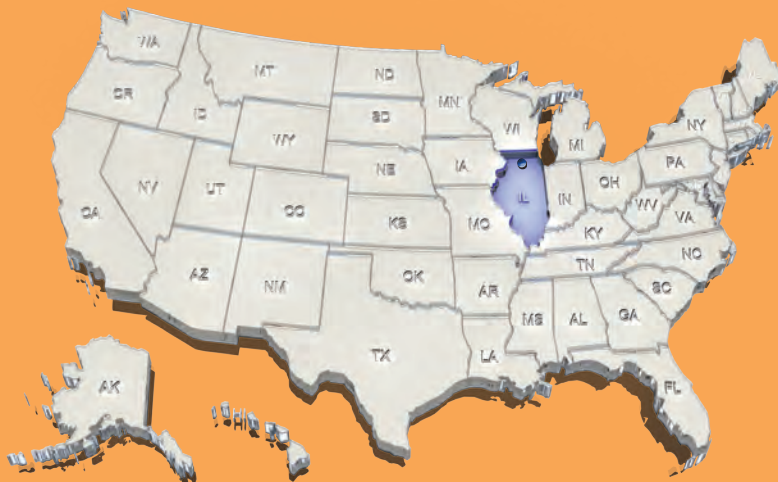


NASA COMPLETES FIRST ROUND OF COMPOSITE SHELL BUCKLING TESTS WITH A BANG

Kathryn Guelde and Ashley Holladay, right, of Aerie Aerospace, LLC, work to install the structural test article for the first series of composite tests at the Marshall Center for the Shell Buckling Knockdown Factor Project. The project is focused on developing and validating new analysis-based design guidelines for building safer and lighter space structures. Designing lighter rockets will allow launch vehicles to carry larger payloads – landers, equipment, habitats, food, water and supplies – paramount to allow humans to travel to deep space destinations, including Mars, where quick resupply is not possible. NASA successfully completed the first series of high-tech composite tests in late spring as a large cylindrical barrel was tested to failure under extreme compressive loads of almost 900,000 pounds. The testing was conducted at Marshall's Load Test Annex, where construction is underway on steel reaction towers and fixtures that will be used for structural loads testing on the SLS core stage intertank and engine section.



SPACEFLIGHT PARTNERS: *UTC Aerospace Systems*



LOCATION:
Rockford, Illinois

NUMBER OF EMPLOYEES: 210

WHAT THEY DO FOR SLS:

The Rockford branch of UTC Aerospace Systems supports SLS by supplying hydraulic power with auxiliary power units for testing and flight of the core stage and boosters.



RS-25 ENGINE FIRES UP FOR NEW TEST SERIES

RS-25 engine testing fired up July 14 at NASA's Stennis Space Center near Bay St. Louis, Mississippi. A 650-second test was conducted July 29 on the A-1 test stand. The test series will provide valuable performance data on the new engine controller and operating parameters needed for launch of the SLS.



‘FLYING IN’ TO THE FUTURE OF SPACEFLIGHT

A visitor at EAA AirVenture Oshkosh “builds” his own SLS. The event, called the “world’s greatest aviation celebration,” is an annual gathering of aviation enthusiasts at Wittman Regional Airport in Oshkosh, Wisconsin. SLS, Orion and industry partners were on hand to recognize local supplier companies and showcase the technologies that will launch humans into deep space.

FOLLOW THE PROGRESS OF NASA’S NEW LAUNCH VEHICLE FOR DEEP SPACE:

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COMING IN AUGUST:

EM-1 booster aft segment cast

RS-25 testing continues at Stennis

Chicago Air and Water Show